IEC 61300-2-56

Edition 1.0 2020-08

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Fibre optic interconnecting devices and passive components – Basic test and measurement procedures –
Part 2-56: Tests – Wind resistance of mounted housing

Dispositifs d'interconnexion et composants passifs fibroniques – Procédures fondamentales d'essais et de mesures –
Partie 2-56: Essais – Résistance au vent des boîtiers installés

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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CONTENTS

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Part 2-56: Tests – Wind resistance of mounted housing

FOREWORD

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International Standard IEC 61300-2-56 has been prepared by subcommittee 86B: Fibre optic interconnecting devices and passive components, of IEC technical committee 86: Fibre optics.

The text of this International Standard is based on the following documents:

FDIS	Report on voting
86B/4300/FDIS	86B/4325/RVD

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts in the IEC 61300 series, published under the general title *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures*, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "http://webstore.iec.ch" in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

INTRODUCTION

Outdoor protective housings are exposed to wind load. The housing fixings should be able to withstand the force of the wind without damage to or movement of the housing or its fixings. The method defined in this document provides reproducible conditions for testing the wind resistance of protective housings and their mounting hardware, either pole-mounted or ground-mounted, in two different horizontal directions (frontal and lateral). Additionally, the conditions for optional testing the wind resistance of pole-mounted protective housings in vertical direction are given.

Depending on the installation and the location, the wind speed can be very different. Even in the same geographic location, the wind speed can vary considerably with height above the ground (e.g. at the top of a mast). Recommended severities are included in this document and considered as a minimum.

Annex A provides reproducible conditions for testing the wind resistance of pole-mounted protective housings in vertical direction.

Annex B provides information for the calculation of the resulting force on the protective housing from wind load.

FIBRE OPTIC INTERCONNECTING DEVICES AND PASSIVE COMPONENTS – BASIC TEST AND MEASUREMENT PROCEDURES –

Part 2-56: Tests – Wind resistance of mounted housing

1 Scope

This part of IEC 61300 describes the test procedure to test the wind resistance of a protective housing and its mounting hardware using the fastening parts recommended by the manufacturer. The protective housing is considered to have a cuboid shape.

The applied force in this test procedure simulates a steady wind load from each direction to a protective housing and its mounting hardware fixed to a support.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 61300-1, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 1: General and guidance*

IEC 61300-3-1, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 3-1: Examinations and measurements – Visual examination*

3 Terms and definitions

For the purpose of this document, the terms and definitions given in IEC 61300-1 apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp

4 General description

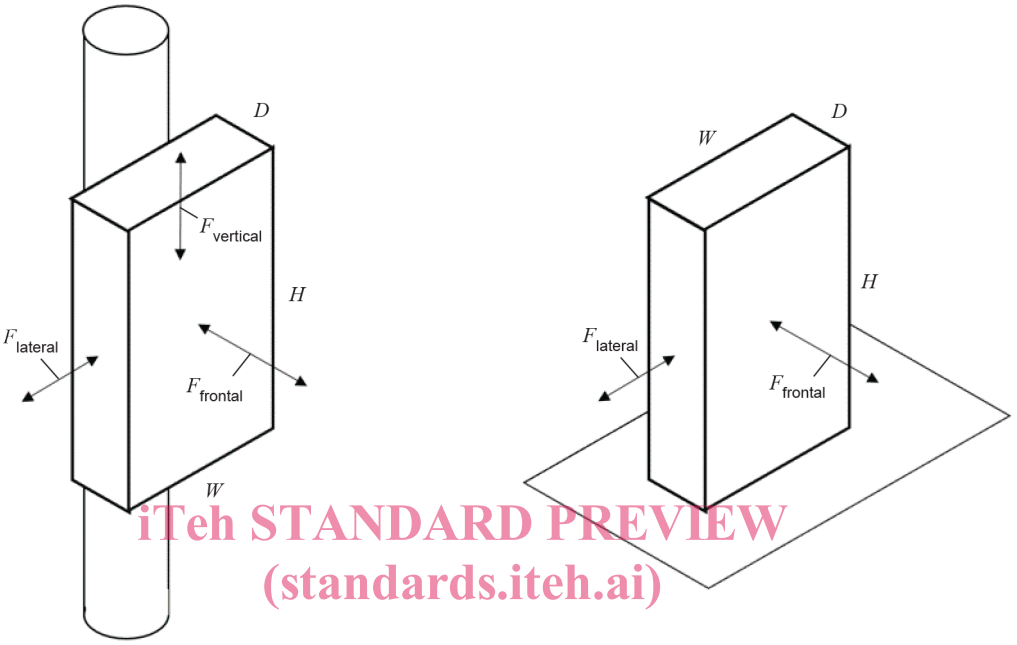
The device under test (DUT) is a protective housing and its mounting hardware fixed to a support using the fastening parts recommended by the manufacturer. A force is applied to the DUT at the specified rate until the required load has been reached. The load shall be applied during the specified period.

Two different installation types are considered: pole and ground mounting.

The acceptance criteria for the test shall be stated in the relevant specification. Typical failure modes include cracks, permanent deformation or other damage of the housing and fastening parts as well as movement of the housing in relation to its initial position on the pole or on the ground.

This test procedure is intended to simulate the wind load on a protective housing and its mounting hardware fixed to a pole or on the ground as shown in Figure 1 a) and b) by applying a force as recommended in Clause 7.

The relevant specification should specify the sequence of load application if the wind resistance is tested in different directions with the same DUT. The dimensions and the applicable wind directions for pole-mounted or ground-mounted housings are shown in Figure 1.



a) Pole-mounted housing **b) Ground-mounted housing**

Key

D depth of the housing

F resultant wind load force

H height of the housing

W width of the housing

Figure 1 – Dimensions of pole-mounted and ground-mounted housing

5 Apparatus

5.1 Loading method

5.1.1 General

The test apparatus shall be capable of applying an axial load to the DUT. For the different installation situations, pole and ground-mounted housing, separate loading methods are described in 5.1.2 and 5.1.3.

5.1.2 Method for pole-mounted housing

The DUT shall be mounted to a pole section according to the manufacturer's recommended installation instruction and using fixing parts (e.g. brackets, screws, hose clamps, etc.) as recommended by the manufacturer. All the normal internal components shall be fitted to the DUT before installation onto the pole. The pole shall be made of material and have a diameter according to the relevant specification. The pole should have a diameter within the range specified for the DUT. The DUT shall be tested with frontal or lateral load application as specified in the relevant specification. Testing with the load application in one direction is

usually sufficient and this should be the direction that gives the highest force to the bracket and the fixing parts. If required by the relevant specification, testing with vertical load application shall be done according to the conditions given in Annex A.

For frontal load application, the DUT shall be mounted to the pole and the load is applied on one side of the DUT via the force gauge as shown in Figure 2 and Figure 3.

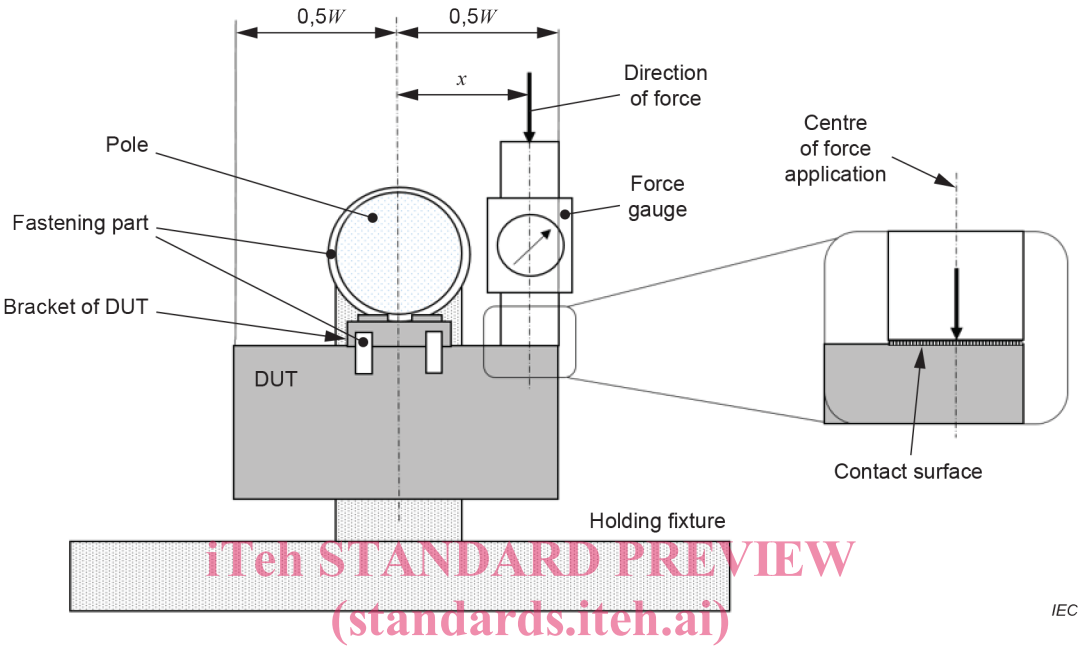


Figure 2 – Side view of frontal load application

The variable x in Figure 2 is the distance from the pole axis to the centre of force application. The outer edge of the contact surface of the force gauge should be aligned closely to the outer edge of the DUT. Then the distance x shall be determined. The value of x is required to calculate the applied force (see Table 1).

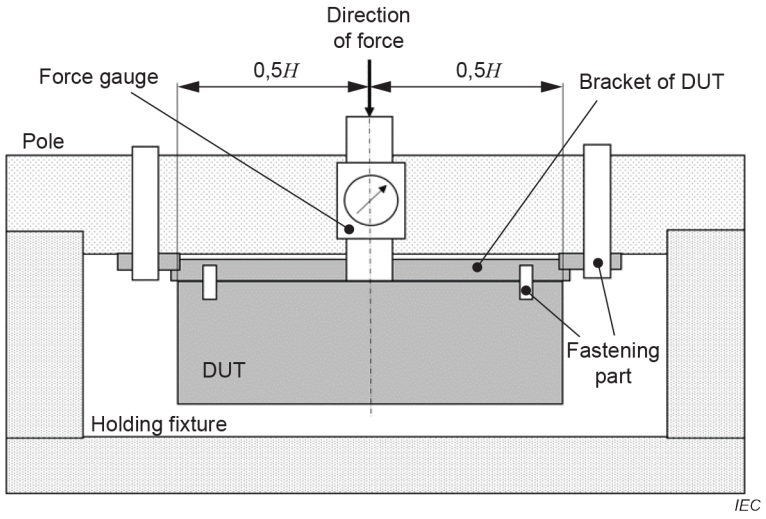


Figure 3 – Front view of frontal load application

For lateral load application, the DUT shall be mounted to the pole and the axial load is applied to the DUT via the force gauge as shown in Figure 4 and Figure 5.

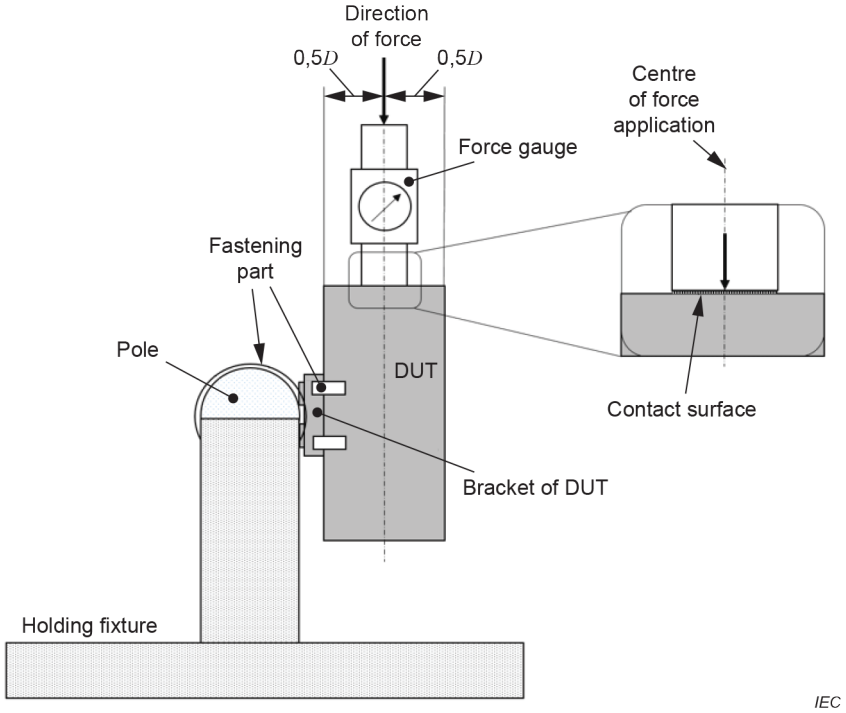


Figure 4 – Side view of lateral load application

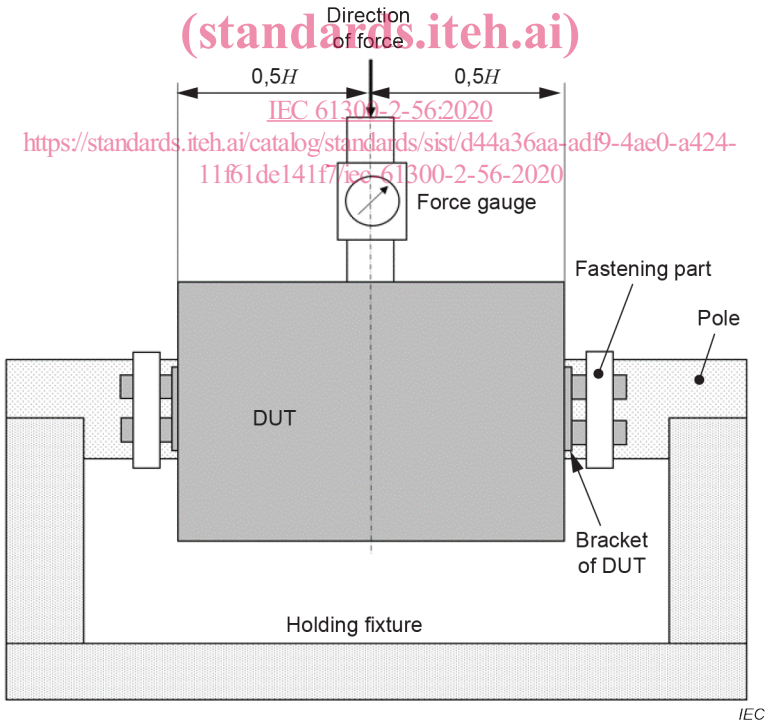


Figure 5 – Front view of lateral load application

NOTE The method of lateral load application described in 5.1.2 can also be used for a wall mounted housing.

5.1.3 Method for ground-mounted housing

The DUT shall be mounted to the ground according to the manufacturer's recommended installation instruction using fixing parts as recommended by the manufacturer. All the normal internal components shall be fitted to the DUT before attaching it to the ground. The DUT shall be tested with frontal or lateral load application as specified in the relevant specification and as shown in Figure 6 and Figure 7. Testing with the load application in one direction is usually sufficient and this should be the direction that gives the highest force to the housing and fixing parts.

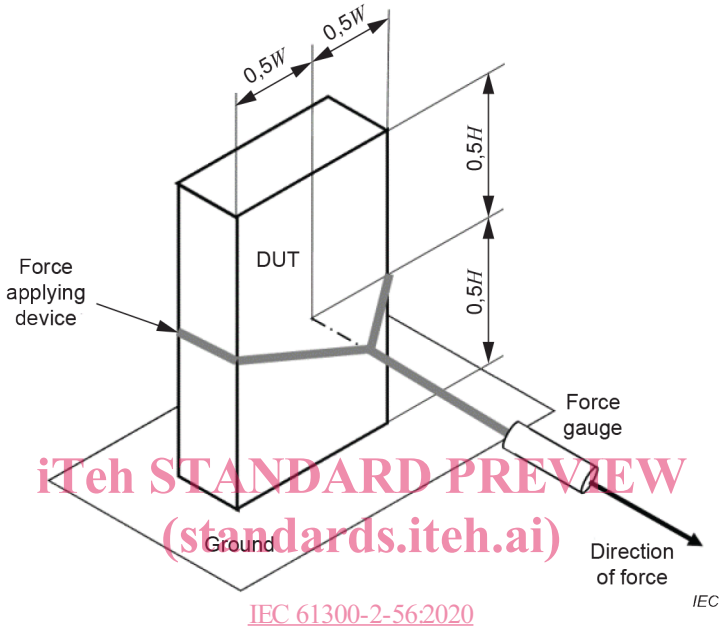


Figure 6 – Isometric view of frontal load application

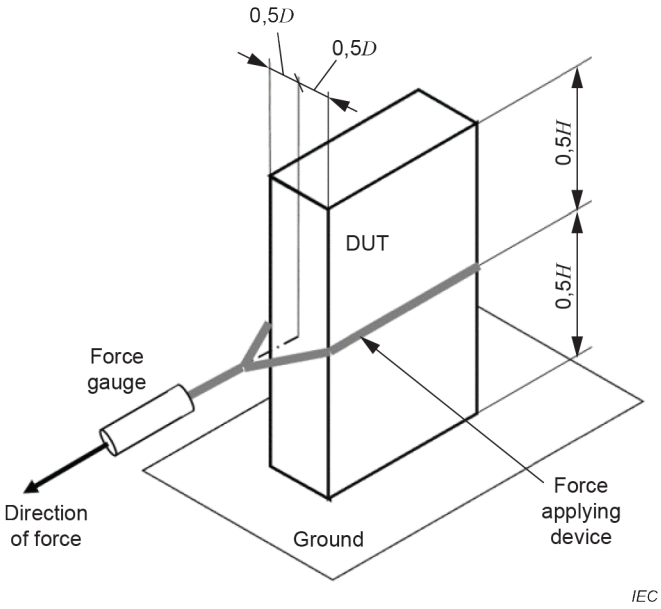


Figure 7 – Isometric view of lateral load application

5.2 Force generator

The force generator may be any device or apparatus capable of smoothly applying the specified force at the specified rate.